



2020 3rd Quarter Report to the Lowell, Massachusetts Board of Health

Reporting Period: July 1- September 30 2020

- **INTRODUCTION:**

This is the 3rd Qtr. 2020 Report for the Lowell Board of Health.

Any questions or concerns surrounding the contents of this report should be directed to:

Trinity EMS, Inc.

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Thank you,

Management Team

Trinity EMS, Inc

TABLE OF CONTENTS

• I.	Introduction	Page 2
• II.	Table of contents	Page 3
• III.	911 Operational Performance Data	Page 4
• IV.	911 Clinical Performance Data	Page 8
• VI	New Trinity employee list	Page 9
• VII	EMD	Page 10
• VIII	Quarterly opioid report	Page 11-12
• IX	Glossary of Terms	Page 13-18

TIMES:	Trinity BLS Q4 2019	Trinity ALS	LGH ALS	Trinity BLS Q1 2020	Trinity ALS	LGH ALS
Fractile %	91.87%	84.32%	92.12%	91.70%	84.92%	91.65%
Avg out of chute	43 sec	1 min 5 sec	50 sec	58 sec	1 min 11 sec	56 sec
Avg resp time	4 min 48 sec	4 min 53 sec	5 min 56 sec	5 min 25 sec	7 min 8 sec	6 min 13 sec
Avg on scene time	11 min 41 sec	13 min 52 sec	15 min 16 sec	12 min 49 sec	15 min 17 sec	14 min 55 sec
Avg transport time	6 min 42 sec	7 min 9 sec	10 min 44 sec	7 min 4 sec	6 min 3 sec	10 min 25
# of events >7:59 response time	429	37	145	429	30	150
# of events using Non Trinity BLS	1	<-- 8th 911 call in Lowell at that time		0		
	Trinity BLS Q2 2020	Trinity ALS	LGH ALS	Trinity BLS Q3 2020	Trinity ALS	LGH ALS
	92.28%	86.30%	91.10%	91.28%	82.72%	90.57%
Avg out of chute	1 min 2 sec	1 min 19 sec	58 sec	1 min 0 sec	1 min 8 sec	1 min 2 sec
Avg resp time	4 min 36 sec	5 min 57 sec	5 min 23 sec	4 min 38 sec	6 min 1 sec	5 min 28 sec
Avg on scene time	11 min 46 sec	9 min 57 sec	13 min 3 sec	14 min 19 sec	16 min 29 sec	15 min 54 sec
Avg transport time	6 min 17 sec	7 min 59 sec	10 min 23 sec	7 min 7 sec	6 min 17 sec	10 min 48
# of events >7:59 response time	389	27	148	475	28	159
# of events using Non Trinity BLS	2	<-- 1 was the 7th 911 call, the other was the 6th 911 in Lowell at that time.		4 total. First 2 where the 8th and 9th emergency in Lowell, 3 + 4 where the 8th and 9th on a different day		

	Q4 2018	Q1 2019	Q2 2019	Q 3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020
TEMS BLS	94.03%	92.75%	94.28%	93.45%	91.87%	91.70%	92.28%	91.28%

BLS OUTLIERS:	2018 Total		2019		Last 4 Qs Total		Q4 2019		Q1 2020		Q2 2020		Q3 2020	
1st Emergency	340	24%	386	26%	434	25%	121	28%	108	25%	111	29%	94	20%
2nd Emergency	372	26%	400	27%	413	24%	96	22%	101	24%	105	27%	111	23%
3rd Emergency	259	18%	306	20%	364	21%	95	22%	87	20%	68	17%	114	24%
4th Emergency	189	13%	181	12%	254	15%	58	14%	64	15%	57	15%	75	16%
5th Emergency	146	10%	135	9%	156	9%	39	9%	41	10%	25	6%	51	11%
6th Plus Emergency	115	8%	96	6%	101	6%	20	5%	28	7%	23	6%	30	6%
	1421		1504		1722		429		429		389		475	
BLS REASONS OVER 7:59:	2018 Total		2019		Last 4 Qs Total		Q4 2019		Q1 2020		Q2 2020		Q3 2020	
Total	1421		1504		1722		429		429		389		475	
Couldn't locate house/lost	40	3%	88	6%	78	5%	26	6%	20	5%	27	7%	5	1%
Crew took long route	115	9%	105	7%	86	5%	29	7%	15	3%	14	4%	28	6%
Distance	350	24%	362	24%	408	24%	127	30%	93	22%	82	21%	106	22%
Dispatch delay	40	3%	141	9%	188	11%	35	8%	35	8%	50	13%	68	14%
Highway	9	1%	17	1%	14	1%	5	1%	6	1%	3	1%	0	0%
Out of chute	186	13%	149	10%	153	9%	39	9%	43	10%	33	8%	38	8%
TEMS Dispatch error	127	7%	49	3%	39	2%	12	3%	14	3%	9	2%	4	1%
Weather	47	5%	42	3%	13	1%	7	2%	4	1%	2	1%	0	0%
EMD	227	16%	257	17%	242	14%	70	16%	49	11%	56	14%	67	14%
911 Call volume	235	17%	215	14%	248	14%	56	13%	65	15%	46	12%	81	17%
others/blank	45	3%	79	5%	253	15%	23	5%	85	20%	67	17%	78	16%

BLS OUTLIERS:		2018 Total		2019		Last 4 Qs Total		Q4 2019		Q1 2020		Q2 2020		Q3 2020	
Within the standard (7:59 >)				20243	93.11%	19180	91.76%	4838	91.85%	4741	91.70%	4651	92.28%	4950	91.24%
0800-0859				734	3.51%	815	3.90%	197	3.63%	207	3.82%	190	3.50%	221	4.07%
0900-0959				402	1.92%	446	2.13%	110	2.03%	107	1.97%	88	1.62%	141	2.60%
1000-1059				201	0.96%	214	1.02%	61	1.12%	53	0.98%	49	0.90%	51	0.94%
1100-1159				77	0.37%	104	0.50%	29	0.53%	21	0.39%	30	0.55%	24	0.44%
1200 plus				83	0.40%	143	0.68%	32	0.59%	41	0.76%	32	0.59%	38	0.70%
								see below		see below		see below		see below	
12 PLUS BREAKOUT		2018 Total		2019		Last 4 Qs Total		Q4 2019		Q1 2020		Q2 2020		Q3 2020	
911 Call volume (5th +)				26	18.18%	32	22.38%	10	26.32%	9	23.68%	6	15.79%	7	18.42%
Distance					0.00%		0.00%	1	2.63%	3	7.89%	1	2.63%	2	5.26%
Crew got lost/couldn't find house				11	7.69%	17	11.89%	4	10.53%	6	15.79%	6	15.79%	1	2.63%
EMD				13	9.09%	22	15.38%	5	13.16%	3	7.89%	5	13.16%	9	23.68%
Highway call				6	4.20%	6	4.20%	3	7.89%	1	2.63%	2	5.26%	0	0.00%
TEMS Dispatch error/delay				13	9.09%	18	12.59%	3	7.89%	2	5.26%	2	5.26%	11	28.95%
Others				12	8.39%	41	28.67%	6	15.79%	17	44.74%	10	26.32%	8	21.05%
38 Q3 2020 over 12 minutes															
1	Fall. FD w/ patient. Priority 3 to hosp	17	EMD delay, pt with dialysis staff, priority 2 transport									33	EMD psy, crew staged		
2	Life call act, FD w/ patient, no transport	18	Pts hand shacking, priority 3 transport										for pd		
3	Psy patient with PD. Priority 3 transport	19	EMD alpha, nose bleed, priority 3 transport									34	Overdose, Narcan by		
4	Abd pain patient, priority 3 transport	20	Psy with PD. Priority 2 transport										bystanders, priority 3		
5	back pain, priority 3 transport	21	7th 911, FD with pt. ALS to hospital									35	EMD fall, pt with nurse		
6	Life assist, no medical issue no transport	22	Psy with PD. Priority 2 transport									36	EMD, GI Bleed, ALS w pt		
7	Psy, crew staged for PD, Priority 3 transport	23	EMD psych, pt with PD									37	EMD, diff breath, FD w/ pt		
8	Psy, priority 3 to hosp, triage on arrival	24	ETOH, priority 3 transports									38	Assault, went to staging		
9	Psy, crew staged for PD, Priority 3 transport	25	EMD for psych, crew staged for police										then waited there		
10	Assault, staged for PD, no transport	26	EMD for psych crew staged for police												
11	Assault, staged for PD no transport	27	OD, LPD provided Narcan, pt CAOx3 after												
12	Psy, staged for PD, no transport	28	ETOH, priority 3 transport												
13	Sec 12, stages for PD, no pt found	29	Unknown medical, nothing found												
14	Abd pain, priority 2 transport	30	Constipation, priority 3 transport												
15	Psy patient with PD. Priority 2 transport	31	Diff breathing, ALS w patient												
16	Leg pain, priority 3 transport	32	eval after fall, patient refusal												

VOLUME:	2018		2019		Last 4 Qs		Q4 2019		Q1 2020		Q2 2020		Q3 2020	
Total responses (ALS & BLS)	30318		30019		28845		7350		7238		6956		7301	
Total ALS Responses	8511	28%	8276	28%	7940	28%	2082	28%	2068	29%	1916	28%	1874	26%
TEMS ALS Responses	955	11%	871	11%	756	10%	236	11%	200	10%	149	8%	171	9%
LGH ALS Responses	7556	89%	7405	89%	7184	90%	1846	89%	1868	90%	1767	92%	1703	91%
INCIDENTS:	21807		21743		20905		5268		5170		5040		5427	
BLS Incident	12340		13467		12965		3186		3102		3124		3553	
ALS and BLS Incident	8467		8276		7940		2082		2068		1916		1874	
Needle pick ups	728		280		158		41		28		41		48	
Non Emergent Lift assists	784		582		83		37		15		9		22	
TRANSPORTS:	2018		2019		Last 4 Qs		Q4 2019		Q1 2020		Q2 2020		Q3 2020	
Total Transports (ALS & BLS)	16379		16483		15478		4167		4063		3455		3793	
Total BLS Transports	13078	80%	12963	79%	12531	81%	3348	80%	3270	80%	2812	81%	3101	82%
Total ALS Transports	3301	20%	3520	21%	2947	19%	819	20%	793	20%	643	19%	692	18%
TEMS ALS Transports	503	15%	362	10%	221	7%	118	14%	20	3%	15	2%	68	10%
LGH ALS Transports	2798	85%	3058	87%	2726	93%	701	86%	773	97%	628	98%	624	90%
TRIAGE:	2018		2019		Last 4 Qs		Q4 2019		Q1 2020		Q2 2020		Q3 2020	
Total Triage	1178	14%	1072	13%	1115	14%	294	14%	295	14%	263	14%	263	14%
TEMS Triage	57	6%	59	7%	47	6%	18	8%	6	3%	11	7%	12	7%
LGH ALS Triage	1121	15%	1013	14%	1068	15%	276	15%	289	15%	252	14%	251	15%

Note: Q3 2019 there were 5663 incidents, 2018 there were 5681, 2017 had 5736

Last Name	First Name	Hire Date	Position	MA Certificate
Gustafson	Kevin	2020-09-28	EMT-B	E863087
Melanson	Derek	2020-09-21	Dispatcher	
Sylvester	Zachariah	2020-08-17	EMT-B	E0917451
Bourk	John	2020-08-17	EMT-B	E0917573
Libby-Billings	Diana	2020-08-17	EMT-P	P865521
Moro	Michael	2020-08-17	EMT-P	P0901452
Paul	Princess	2020-08-17	EMT-B	E0915783
Stepenuck	Crystal	2020-08-17	EMT-B	E0904589
Albano	Andrea	2020-07-13	EMT-B	E0914435
Bushway	John	2020-07-13	EMT-B	E0915460

EMD- Direct to Trinity

On August 21, 2020 Trinity Re-Accredited. This included an outside audit of our process, policies, and scoring. The audit included a random review of calls and scored completed by Trinity.

	2018 Total	2019	Last 4 Qs Total	Q4 2019	Q1 2020	Q2 2020	Q3 2020
Alpha (BLS-P3)	1524	1296	1339	335	402	275	327
Bravo (BLS-P2)	444	453	387	129	120	69	69
Charlie (ALS-P1)	722	719	600	167	190	121	122
Delta (ALS-P1)	634	716	571	163	169	142	97
Echo (ALS-P1)	3	6	5	1	1	2	1
Total EMD by Trinity in Lowell	3327	3190	2902	795	882	609	616

The above data are direct calls to Trinity for patients in Lowell.

Alpha- results in BLS going no lights or sirens to the patient

Bravo- results in BLS going lights and sirens to the patient

Charlie, Delta, Echo- results in ALS and BLS going lights and sirens to the patient

As part of Trinity EMS's EMD accreditation a portion of the above calls are randomly selected for quality assurance review. TEMS reviews 25 EMD'ed calls per week. These 25 calls could come from any city or state. Potentially none or all 25 calls could be for patients in Lowell.



		2018 Total		2019 Total		Last 4 Qs Total		Q4 2019		Q1 2020		Q2 2020		Q3 2020	
	Acre	125	15%	63	15%	53	12%	13	10%	13	14%	13	14%	14	10%
	Back Central	107	13%	82	13%	83	19%	20	16%	14	15%	14	15%	35	25%
	Belvidere	17	2%	17	2%	18	4%	6	5%	5	5%	5	5%	2	1%
	Centralville	109	13%	68	13%	58	13%	27	22%	8	9%	8	9%	15	11%
	Downtown	204	25%	138	25%	109	24%	25	20%	24	26%	24	26%	36	26%
	Highlands	48	6%	36	6%	26	6%	6	5%	7	8%	7	8%	6	4%
	Lower Belvidere	21	3%	11	3%	8	2%	2	2%	1	1%	1	1%	4	3%
	Lower Highlands	81	10%	51	10%	47	10%	16	13%	6	7%	6	7%	19	13%
	Pawtucketville	48	6%	25	6%	21	5%	5	4%	5	5%	5	5%	6	4%
	Sacred Heart	42	5%	21	5%	17	4%	3	2%	6	7%	6	7%	2	1%
	South Lowell	9	1%	11	1%	8	2%	2	2%	2	2%	2	2%	2	1%

ALS:	Life Support- may refer to vehicles staffed with a least one paramedic or refer to a paramedic level of patient care. Trinity Emergency ALS vehicles are staffed with two paramedics.
A Response:	Is defined as dispatching or sending an ambulance to a request for service. In this report , a response is further sorted to include only emergency responses. These numbers do not include routine transfers such as dialysis patients or radiation treatment patients.
A Transport:	Is defined as taking a patient in an ambulance to a destination.
BLS:	Basic Life Support- may refer to a vehicle staffed with two emergency medical technicians (EMT) or an EMT level of patient care. Trinity BLS ambulances are staffed with two EMT's
EMD:	Emergency Medical Dispatch- a nationally recognized system whereby dispatchers are trained and follow a specific protocol to ascertain the nature of illness/injury and provide patient care instructions to the caller until the First Responders or ambulance arrives.
Intubation Attempt:	Is defined as insertion of the laryngoscope blade into the oral cavity for the purpose of inserting an endotracheal tube.
MAI:	Medication Assisted Intubation is generally regarded as facilitating an intubation with the use of sedatives. In Massachusetts how ever, this term includes the use of Paralytics. The Massachusetts MAI program is not part of the standard scope of practice for Paramedics. It is controlled through the Department of Public Health's Office of Emergency Medical Services Medical Services Committee.
On scene time:	The amount of time that has elapsed from the moment the ambulance is on scene to the moment the ambulance begins transport or is released back into service
Out of chute time:	The amount of time that elapses from the moment when the ambulance is dispatched to the moment the ambulance begins moving towards the call.
On time performance score:	Is the percentage of calls that meet or exceed the response time criteria.
Request for service:	When a dispatcher receives request for an ambulance usually via telephone or radio
Response time:	The amount of time that has elapsed from the moment the call is completely entered into the dispatch system to the moment the ambulance arrives on scene.

RSI: Rapid Sequence Intubation is the facilitation of intubation using both sedatives and paralytics

Service Zone Plan: M.G.L. Part 1 Title XVI Chpt. 11C Section 1 defines as "a geographic area defined by and comprised of one or more local jurisdictions, in which a local jurisdiction may select and the department shall designate an EMS first response service and an ambulance service to provide EMD first response and primary ambulance response to the public within the defined area, pursuant to section 10." Massachusetts Regulations 105 CMR 170.249.

Transport time: The amount of time that has elapsed from the moment the ambulances leaves the scene with a patient to the moment the ambulance arrives at the receiving facility

Triage down: When a paramedic units arrives at the patients side and based on the patient condition determines that the patient may be treated and transported at the BS level. Note- There is no protocol for this practice, however, OEMS does address it though an administrative advisory: A/R5=620.

- The following document is a detailed outline of the reporting process used by Trinity EMS.
- **Responding lights and sirens**
 - From Lowell 911
 - All calls require a lights and sirens response regardless of the patients condition except
 - Needle pick ups
 - Pt carry down/up without a medical issue
 - Unless requested to response without lights and sirens by the 911 center.
 - Direct to Trinity calls that Trinity EMD's
 - Bravo, Charlie, Delta, and Echo go with lights and sirens
 - Alpha or Omega level calls go without lights and sirens
 - Direct to Trinity that Trinity doesn't EMD
 - Response lights and sirens for any patients. Unless the calling agency EMD'ed the call to a non-urgent level.
 - This set of calls would include call from UMASS PD, or other ambulance services.
- Incident
 - A request for or by someone within the city limits of Lowell that requires an EMS response.
 - Each request is counted as 1 incident
 - A patient that gets a BLS unit for back pain is counted as 1 incident
 - A 10 car MVC with 20 patients requiring 6 BLS, 2 ALS, and 2 helicopters is counted as 1 incident
- Responses
 - Counts the number of occurrences when EMS vehicles response lights and sirens to a call.
 - An ALS and BLS unit response to a patient with chest pain, that counts as 2 responses. (2 vehicles put their lights on)
- Times:
 - All below are from incidents
 - BLS
 - Priority 1, and 2 incident responses
 - Includes 911 and calls direct to Trinity
 - Any call directly to Trinity from another call center that would require an emergent response
 - (IE- Umass Lowell calls Trinity for a chest pain)
 - Any Charlie, Delta, Echo response called and EMD'ed by Trinity
 - Includes call when ALS and BLS responded as well as call when just BLS responded.
 - **Q# year# Performance score**
 - Is the created by
- Dividing the number of incidents BLS units responded to.

- Into the number of those calls that shows a response time over 08:00 or greater
 - Calls excluded
 - Delta level calls EMD'ed by Trinity that had a total response time of greater than 07:59
- **Avg out of chute**
 - Time from Trinity designated and selected ambulance was assigned call to selected crew to the time selected vehicles starts movement towards this call
 - Excluded-
 - Any time showing more than 10 minutes is excluded as likely time stamp missing
- **Avg response time**
 - From Call saved by Trinity dispatch to time ambulance arrived at geocoded location of the call.
 - Within Trinity CAD- The call saved time is called "call taken". This time is created after Trinity dispatch get an address, apartment, complaint, and any other info 911 passed along.
 - Excluded-
 - Charlie, delta, Echo, and Omega calls direct and EMD'ed by Trinity that result in a response time over 07:59
 - Any time showing more than 20 minutes is excluded as likely time stamp missing
- **Avg on scene time**
 - Includes only calls included above
 - Time from crew arrival on site to time vehicle:
 - Clears
 - Occupies to the hospital
 - Excluded
 - Any time showing more than 30 minutes is excluded as likely time stamp missing
- **Avg transport time**
 - Includes only calls included above
 - Time from crew: Clears or arrives to the hospital
 - Excluded
 - Any time showing more than 20 minutes is excluded as likely time stamp missing
- **# of events >7:59 or greater**
 - Includes any call that includes calls included from reasons earlier in the section
 - That's response time is greater than 07:59
 - Excluded
 - Any call where the unit is canceled prior to arrival
- Called that were EMD'ed by Trinity

- No other calls are excluded- weather, 911 call volume as examples are outliers counted and categories in the “BLS reasons over 07:59”
- **# of events using Non Trinity BLS units**
 - Requests for ambulances to Trinity that Trinity was not able to send a BLS unit on within the State mandated 5 minute dispatch time for
 - Any 911 priority 1 or 2 call
 - Any call directly to Trinity from another call center that would require an emergent response
 - (IE- UMass Lowell calls Trinity for a chest pain)
 - Any Charlie, Delta, Echo response called and EMD’ed by Trinity
- ALS
 - The only difference from the BLS is the ALS times start at dispatch, and not call created
- **BLS Outliers:**
 - For any BLS response over 07:59
 - Trinity will make note and report in this section the number of concurrent emergencies in Lowell at the time this call is created.
 - Includes 911 calls and calls direct to Trinity
 - Non-emergency and call in other cities will not be counted
- **BLS Reasons over 07:59**
 - For any BLS response over 07:59
 - Trinity will conduct a route cause analyses as to the reason for the response time
 - Trinity will take note and report in this section. These reasons will be grouping into 1 of the following
 - Couldn’t location house/lost
 - Crew passes the geo-coded location for the address more than once without getting on arrival
 - Crew took long route
 - Crew did not take the fastest route from their dispatch location to the pickup location
 - Distance
 - Usually this is used when a
 - Dispatcher gives the call out within 60 seconds
 - The crew is enroute within 120 seconds
 - Posting is happening
 - The ambulance crew went the most direct route
 - Circumstances include
 - If there is a second call in a sector of the city before reposting. 2nd call in downtown, this ambulance to the second call has two reports a much greater distance to the patient.

- Also the extra time could be traffic, school buses, and people not willing to move. I I
 - Gets used if none of the others fit.
 - ALSO
 - If the address is far away from one of the top 4 posting locations
 - Posting location 1 is Chelmsford and Westford
 - Posting location 2 is Bridge & W 6th
 - Posting location 3 is Callery Park
 - Posting location 4 is Mammoth and 4th
 - Far away is not defined in miles. More looking at the map and lacking a different issue this is selected.
- Dispatch chute
 - A Trinity EMS dispatch took more than 59 seconds from call saved to dispatch. This could be due to error or workload
- Highway
 - The location of the call is a highway. Accessing highway locations usually takes extra time do to divided 1 way road
- Out of Chute
 - The Trinity EMS crew took at least 120 seconds to get from a dispatched stage to the ambulance physically moving towards the call
- GPS fail
 - If our ambulance tracking program is not running we cannot prove a response time or a root cause.
- TEMS Dispatch error
 - An example of this is TEMS dispatcher entering the wrong house or address.
- Weather
 - Did weather impact posting or travel time. Usually snow/ extreme cold or heat
- 911 Call volume
- Was this call more than the 4th emergency in Lowell at this time